

Determinants of uncontrolled hypertension in adult type 2 diabetes Mellitus: An analysis of the Malaysian diabetes registry 2009.

ABSTRACT

Background: Uncontrolled blood pressure (BP) is a significant contributor of morbidity and even mortality in type 2 diabetes (T2D) patients. This study was done to determine the significant determinants of uncontrolled blood pressure in T2D patients in Malaysia. **Methods:** Between 1st January 2009 to 31st December 2009, data from 70 889 patients with Type 2 diabetes was obtained from the Adult Diabetes Control and Management Registry for analysis; 303 centres participated in the study. Their demographic characteristics, the nature of their diabetes, their state of hypertension, treatment modalities, risk factors, and complications are described. Based on their most recent BP values, subjects were divided into controlled BP and uncontrolled BP and their clinical determinants compared. Independent determinants were identified using multivariate logistic regression. **Results:** The mean age of patients at diagnosis of diabetes was 52.3 ± 11.1 years old. Most were women (59.0 %) and of Malay ethnicity (61.9 %). The mean duration of diabetes was 5.9 ± 5.6 years. A total of 57.4 % were hypertensive. Of the 56 503 blood pressure (BP) measured, 13 280 (23.5 %) patients had BP $<130/80$ mmHg. Eighteen percent was on $>$ two anti-hypertensive agents. Health clinics without doctor, older age (≥ 50 years old), shorter duration of diabetes (< 5 years), Malay, overweight were determinants for uncontrolled blood pressure (BP $\geq 130/80$ mmHg). Patients who were on anti-hypertensive agent/s were 2.7 times more likely to have BP $\geq 130/80$ mmHg. Type 2 diabetes patients who had ischaemic heart disease or nephropathy were about 20 % and 15 % more likely to have their blood pressure treated to target respectively. **Conclusions:** Major independent determinants of uncontrolled BP in our group of T2D patients were Malay ethnicity, older age, recent diagnosis of diabetes, overweight and follow-up at health clinics without a doctor and possibly the improper use of anti-hypertensive agent. More effort, education and resources, especially in the primary health care centres are needed to improve hypertensive care among our patients with diabetes.

Keyword: Type 2 Diabetes Mellitus; Hypertension; Antihypertensive agents; Primary care.